

ON AN INTERESTING COLLECTION OF TRICHOPTERA
FROM JAPAN

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THIRTY-TWO FIGURES

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This paper contains the description of a collection of Trichoptera made by Mr. M. Uéno during the year 1931 at various localities of Japan. The collection (in fluid) comprises 16 species and proved to be very interesting. Unfortunately, I could not determine some few forms precisely, since they are represented by females only. I should like here to express my thanks to Mr. M. Uéno for the kindest proposal made to me to examine his collection.

Suborder: Annulipalpia

Fam. Rhyacophilidæ

Rhyacophila sp.

1 ♀. Shôbugahama, Nikkô. 6. VI. 1931, M. Uéno.

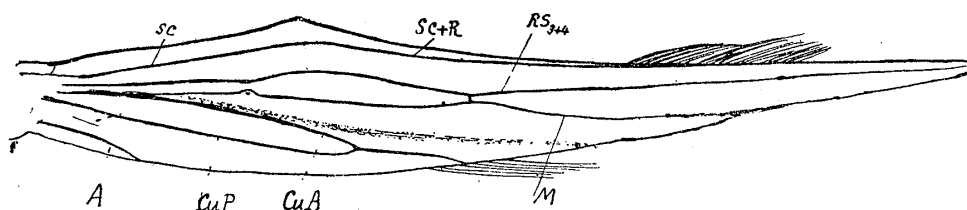
Colouring dark; anterior wings pale brownish, with elongated apical portion; pterostigma dark; fork 1 beginning a little earlier than the fork 2; posterior wings also elongated, but paler; pterostigma dark, apical forks 1 and 2 beginning at same level. Length of body 9.5 mm.

Fam. Hydroptilidæ

Oxyethira angustella n. sp. (Fig. 1)

1 ♀. Matsumoto, Prov. of Shinano, a limnocythere. 15. XII. 1931, M. Uéno.

Head and thorax brown, densely clothed with brownish hairs. Antennæ 29-jointed; basal joint thick, elongated, the remaining 28 joints short, clothed with verticilli of short hairs; last six joints more

Fig. 1.—*Oxyethira angustella* n. sp. Hind-wing.

slender. 5th joint of the palpi maxillares a little longer than the 4th, which is a little longer than the 3rd. Spurs 0. 3. 4. Wings narrow and brownish; in the posterior wings RS_{3+4} is as attracted to M by a short cross-vein (fig. 1); nearer to its base M forms a curvature to R ; before CuA a brownish stripe; CuA and CuP united in their end-portions, as usual.

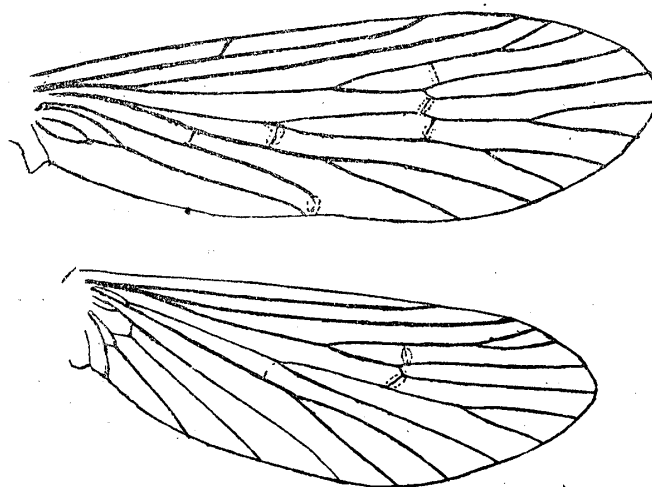
The genus *Oxyethira* Eat. has hitherto been unknown from Japan.

Fam. Philopotamidæ

1. *Dolophilodes excisus* n. sp. (Fig. 2, 3 and 4)

1 ♂. Jigokudaki, a water-fall at Nikko (ca. 1350 m above the sea).
6. VI. 31, M. Ueno.

Head and thorax blackish brown above, brown beneath; antennæ slender, dark brown; palpi maxillares brown, basal joint thick, but very short, 2nd somewhat elongated, bearing erect bristles and as long as the 4th joint, 3rd about $1\frac{1}{2}$ longer; 5th longer than the 3rd and 4th combined; in the palpi labiales 3rd joint as long as the 2nd and 1st

Fig. 2.—*Dolophilodes excisus* n. sp. ♂ Wings.

combined. Legs brown. Anterior wings brownish, with indistinct rounded pale irrorations vanishing in the hind part of wing; veins distinct (fig. 2), discoidal cell elongated, closed by hyaline cross-vein; 1st apical fork elongated; cross-veins *r-m* and *m* hyaline, median cell long. Posterior wings pale-brownish; discoidal cell elongated and closed with hyaline cross-vein; *M* dividing earlier than *CuA*, apical fork 1 present, narrow. Abdomen brown in its basal part, last 3-4 segments blackish brown.

♂. 9th segment blackish brown, with somewhat concave hind edge, if seen from side; dorsal portion very narrow. Appendices praeanales are in the form of two vertical plates, if seen from side (fig. 3) rounded; seen from above they are triangular, with somewhat tuberculated inner edge, bearing erect bristles; externally from them are placed lateral portions of the 9th, tergite (fig. 4), which are suddenly dilated. 10th segment very short, subtriangular above; its hind portion subdivided into two minute lobes by a median narrow cleft. Pedes genitales large, brown; basal joint broad viewed from side, truncated at its still broadened end; seen from above it is narrow, but thickened to the base. 2nd joint but a little shorter than 1st, thick, broad above and turned inwards; its apical portion excised behind, yellowish brown at its end. Length of body 5.5 mm.

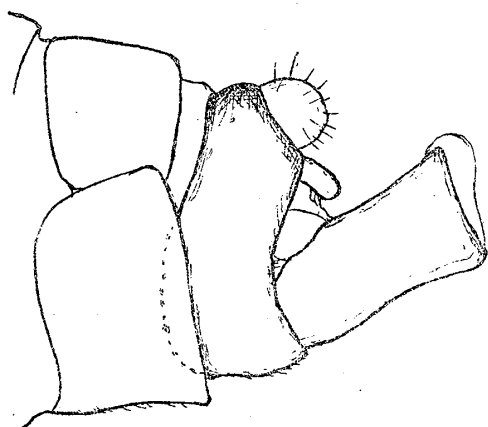


Fig. 3.

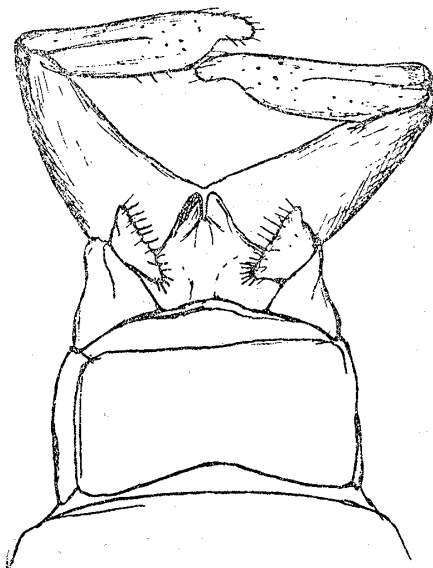


Fig. 4.

Fig. 3.—*Dolophilodes excisus* n. sp. Male genitalia from side. Fig. 4.—Same from above.

Philopotamus japonicus Banks (1906) also has the simple second joint in the pedes genitales (♂). Therefore, it belongs probably to the genus *Dolophilodes* Ulmer, but represents a distinct species.

2. *Dolophilodes auriculatus* n. sp. (Figs. 5-6)

♂. Ushio near Ôtsu. 19. V. 31, M. Uéno.

Head and thorax blackish brown, clothed with brown and greyish hairs; legs brownish, coxæ brown; spurs long, brown; femora of posterior legs subdivided into two portions by a sort of articulation. Palpi maxillares long, 5th joint almost as long as the 4th, 3rd and 2nd combined; 2nd joint elongated and as long as the 4th, 3rd longer; in the palpi labiales 3rd joint as long as the 2nd and 1st.

Anterior wings pale, greyish, densely clothed with greyish and brownish (in alcohol) hairs; pterostigma darker; venation as in the foregoing species, but the cross-vein *rs-m* reaches M_{1+2} somewhat earlier. Posterior wings also greyish, densely clothed with hairs; venation as in the foregoing species, but the apical fork 1 very short. Abdomen brownish.

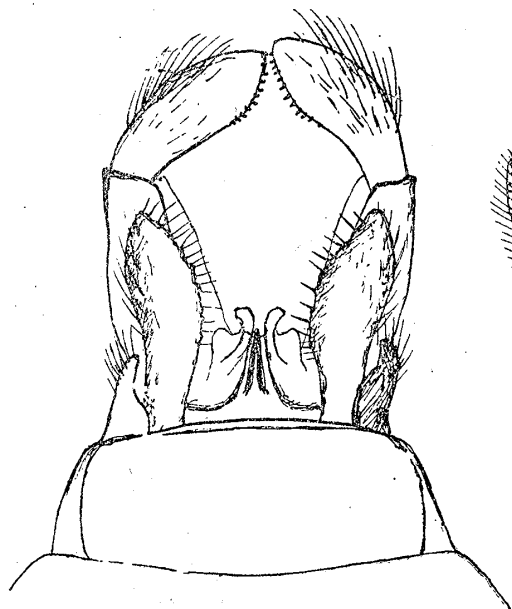


Fig. 5.

Fig. 5.—*Dolophilodes auriculatus* n. sp. Male genitalia from above.

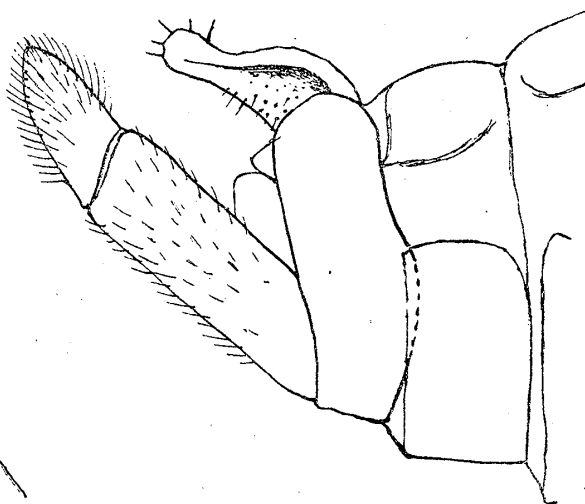


Fig. 6.

Fig. 6.—Same from side.

♂. 9th segment as in the foregoing species; upper portion very narrow; appendices præanales rather large; seen from above they are broad, but narrowed to their base, with inner edge tuberculated and

bearing short erect hairs; seen from the side they are broad and concave in their basal parts, but their distal portions are narrower and rounded. 10th segment very short, composed of two subquadrangular side portions and of one very narrow median brownish elevation (above); inner part of each side-portion is somewhat raised and then prolonged into a short process which is somewhat curved outwards. Basal joint of the pedes genitales long, moderately broad, with parallel upper and lower edges; second joint shorter than the first and turned inwards, clothed with long hairs externally, but bearing minute spinules internally; seen from above they are broad, but somewhat narrowed in their bases. Penis not exerted.

Size nearly equal to that in the foregoing species.

Judging by Banks'¹ figure 7 in Pl. III. both pedes genitales and appendices præanales in *Philopotamus japonicus* Banks remind clearly of those in *D. auriculatus*, seen from side, but the second joint in *Philopotamus japonicus*, as one may judge by the right part of his figure 7, has a very different shape from that in our species. Since Banks' figure 7 is very insufficient and no description of the genital appendages is given in his paper, the comparison between *P. japonicus* Banks and the present species is very difficult. Therefore, I am not quite sure if *D. auriculatus* really differs from *Philopotamus* (= *Dolophilodes*) *japonicus* Banks.

Fam. Hydropsychidæ

To this family belong two species in the collection of M. Uéno, but, unfortunately, they are represented by females only and cannot be determined precisely.

1. *Hydropsyche* sp.?

1 ♀. Kumanoyu, Prov. of Shinano. 6. VIII. 1931, M. Uéno.

Anterior wings yellowish brown, without reticulation; in the posterior wings small 1st fork present; med-legs but feebly dilated.

2. *Hydropsychodes* sp.?

1 ♀. Kumanoyu, Northern Shinano. 6. VIII. 1931, M. Uéno.

¹ N. Banks.—New Trichoptera from Japan.—Proc. Entom. Soc. Washington, vol. 7, no. 2-3, 1906, pp. 111 and 113.

Suborder: Integripalpia

Fam. Odontoceridæ

1. *Psilotreta armata* n. sp. (Figs. 7-10)

♂, ♀. Ushio near Ôtsu. 19. V. 1931, M. Uéno.

Head and thorax brown, paler beneath; unchitinized part pale, whitish. Antennæ thick, long and brown; in the palpi maxillares the 5th joint is the longest, 4th being as long as the 2nd; all joints clothed with erect but short hairs; palpi labiales short. Anterior wings brownish, clothed with dark hairs; 2nd fork sessile and acute (fig. 7).

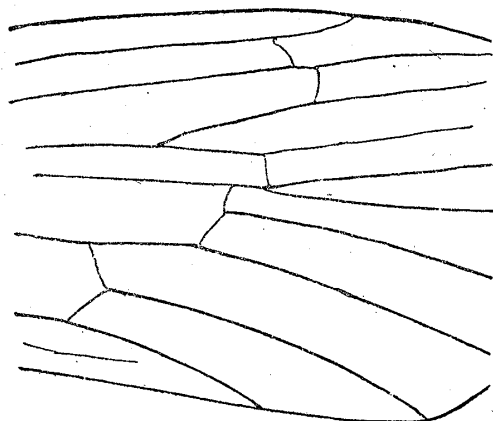


Fig. 7.—*Psilotreta armata* n. sp. ♂ A part of fore-wing.

In the female 2nd fork is also sessile and acute. 3rd being pedicellate. Posterior wings pale, densely clothed with blackish hairs. Abdomen blackish brown, with pale lateral lines; 7th segment provided with two projections in its pleural portions.

broad. Appendices præanales large, foliaceous seen from side, attenuated to their ends, bearing long hairs in the distal portions. 10th segment thick viewed from side and subdivided into two portions, basal and distal, the latter of which is divided by the median triangular cleft by a waist into two lobes, subacute at their ends viewed from above, and rounded, if seen from the side. Basal joint of the pedes genitales thick, bulbous, bearing very long and somewhat outstanding hairs; second joint shorter and more

♂. 9th segment dark brown, triangularly excised at sides; dorsal part forming triangular projection which is almost acute at its end; side portions broad, with hind margin truncated; sternite not very

♂. 9th segment dark brown, triangularly excised at sides; dorsal part forming triangular projection which is almost acute at its end; side portions broad, with hind margin truncated; sternite not very

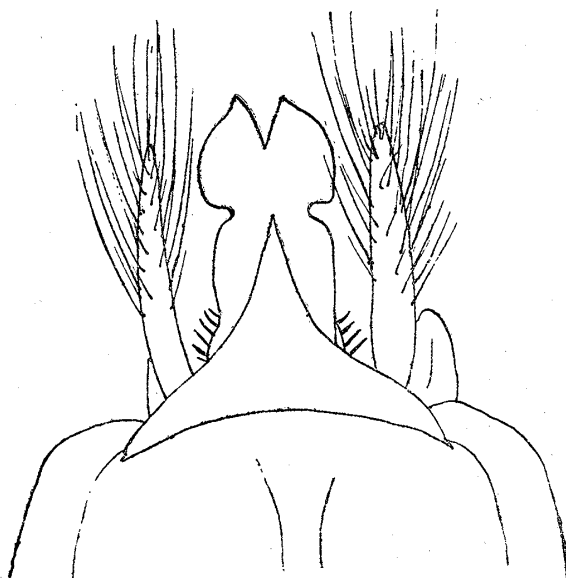


Fig. 8.—*Psilotreta armata* n. sp. Male genitalia from above.

slender, dark yellowish, rounded at its apex, in its distal portion bearing several thick and curved acute spinules. Penis thick, membranous, erectile; one may appreciate internally two lateral short stick-shaped brown appendages.

♀. Last segment ending with two subtriangular short appendages (ap. præanales?).

Length of body 7.5 mm in ♂, 8 mm. in ♀.

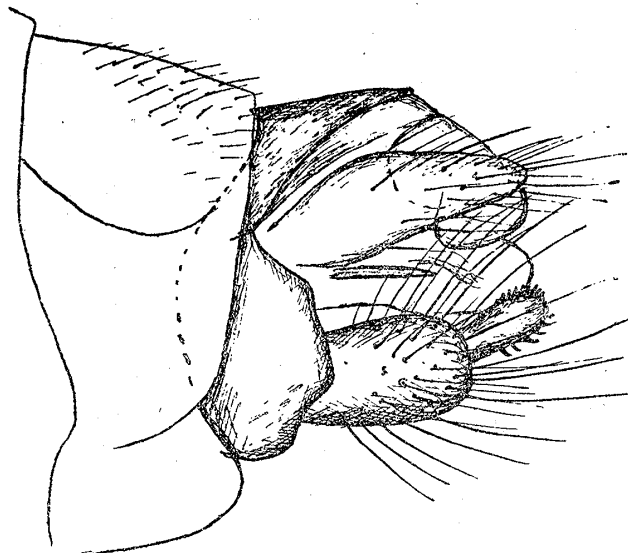


Fig. 9—*Psilotreta armata* n. sp. Male genitalia from side.

2. *Perissoneura paradoxa* McLachlan.

1 ♂. Mt. Daisen, Prov. of Hōki. 6. VII. 1931, M. Uéno.

Wings dark brown, with but very small whitish spots; length of the specimen 15.5 mm. The shape of the male genital appendages quite agrees with Ulmer's Pl. 1, figures 14 and 15².

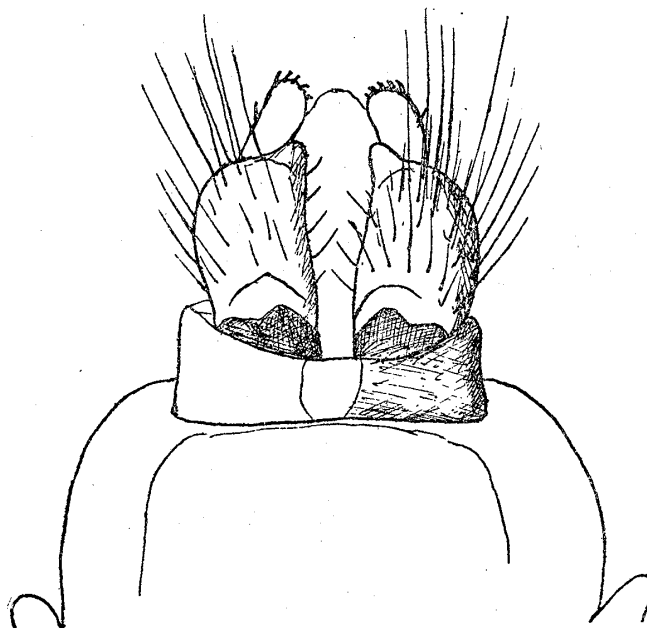


Fig. 10.—*Psilotreta armata* n. sp. ♂ Male genitalia from beneath.

² Stettin. Entom. Zeitg., 1905, p. 19, Pl. I.

Setodes appendiculata n. sp. (Figs. 11-14)

2. ♀♀ Kumanoyu, Prov. of Shinano. 6. VII. 1931, I. Yokouchi.

Body yellowish; anterior wings pale, clothed with hairs; colour pattern? (both specimens in fluid); venation resembling that in *S. viridis* and *S. punctata*; cross-veins *irs*, *rs-m* and *m-cu* arranged almost at one and same level (fig. 11); discoidal cell rather short, fork of *M* but little longer than its pedicel. In the posterior wings *RS* divides much earlier than *M*, which forms but small fork.

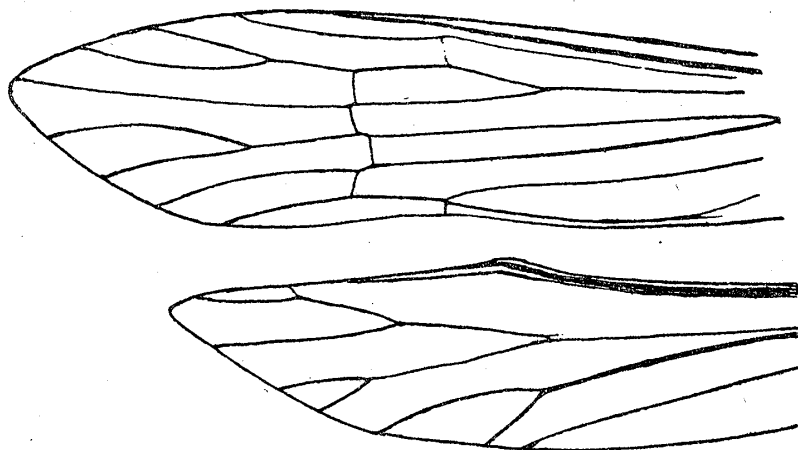


Fig. 11.—*Setodes appendiculata* n. sp. Wings.

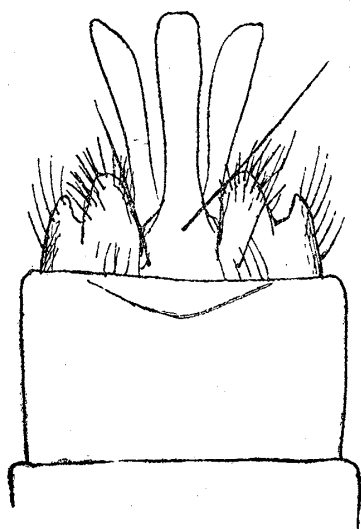


Fig. 12.—*Setodes appendiculata* n. sp. Female genitalia from above.

♀. 9th segment broad in its lateral and ventral portions, the latter of which is especially broad and hairy, its hind margin forming a rounded median projection which is separated by two lateral excisions (fig. 14.) 10th segment narrow above, long and pale (fig. 12); seen from side its apical portion is very narrow and acute at end (fig. 13). "Lateral lobes" rather long and broad, with upper and lower margins parallel: their hind margin, seen from side, forms a rounded projection by an excision separated from the lower narrow lobe; this lobe bears two long bristles which are directed upwards and inwards. Viewed from beneath, the lateral lobes are not as broad as seen from side;

each lobe is divided into two parts, one being long outer and the other short inner, which is provided on its inner margin with a series of short spinules and two long bristles as mentioned above³.

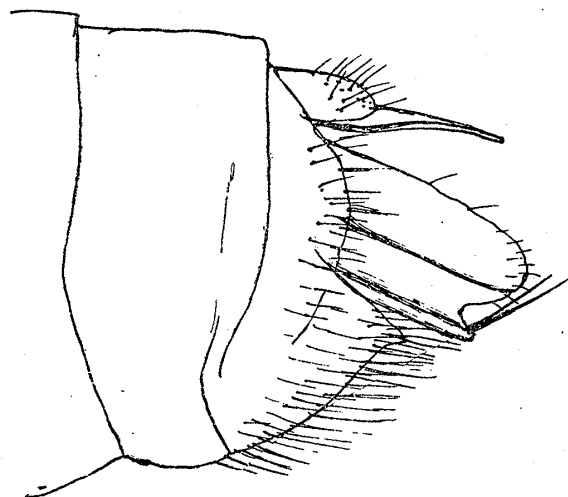


Fig. 13

Fig. 13.—*Setodes appendiculata* n. sp. Female genitalia from side. Fig. 14.—Same from beneath.

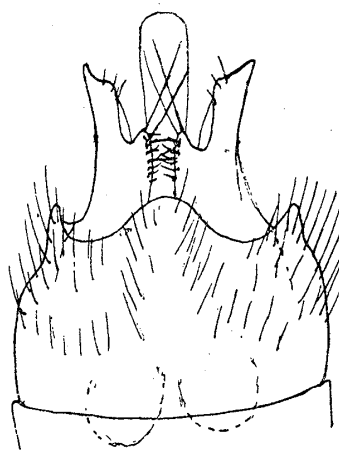


Fig. 14

Fam. Phryganeidæ

Phryganopsis latipennis Banks

- 1 ♂. Matsumoto, Prov. of Shinano, a limnocrene. 15. XII. 1930, M. Uéno.

Fam. Sericostomatidæ

1. *Severinia crassicornis* Ulmer

- 1 ♀. defect specimen (abdomen lacking).—Jigokudaki, Nikko. 6. VI. 1931, M. Uéno.

2. *Micrasema quadriloba* n. sp. (Figs. 15-17)

- 1 ♂. Jigokudaki, Nikko. 6. VI. 1931, M. Uéno.

Head brown with yellowish and brownish hairs; thorax dark

³ As far as I can judge from Matsumura's description and figures (in Japanese) which were kindly sent to me by Mr. Uéno, this species apparently differs from *Setodes argentata* Matsumura.

brown, clothed with yellowish hairs above. Antennæ brownish; palpi maxillares rather long, nearly reaching the end of the basal joint of antennæ; 3rd joint but a little longer than the 2nd; palpi labiales are as long as the palpi maxillares. Legs yellowish brown, coxæ dark brown. Anterior wings brownish (in spiritus); venation (fig. 15) similar to that in *M. setiferum* McLach., apical 1st fork angulate, not deeply impinging on the discoidal cell which is small but elongated; 2nd fork pedicellate, 3rd acute at its base.

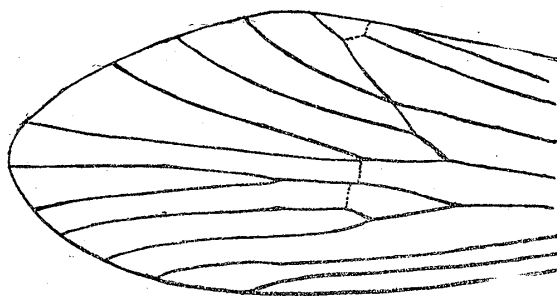


Fig. 15.—*Micrasema quadriloba* n. sp. ♂
A part of fore-wing

Abdomen brown, somewhat paler beneath.

♂. Sixth sternite with a small tooth. Median portion of the 8th tergite not chitinized, completely pale (fig. 16); hairs few but long, each springing from a small circular pale dot. Lateral portions of the 9th segment very broad, dark brown, triangularly produced backwards as well as inwards into the 8th segment; dorsal part narrow but produced in the middle into a triangle; sternite narrow. Appendices præanales brownish, rather large, broad above, but connected by a median pale membrane which is triangularly excised; the apical portion of each appendage is also provided with the triangular excision, thence in the whole structure there are four triangular projections which are

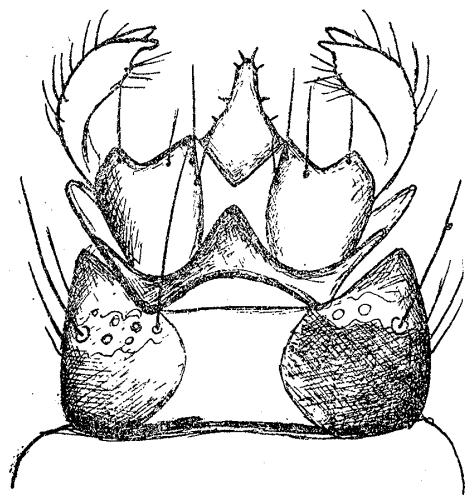


Fig. 16

Fig. 16.—*Micrasema quadriloba* n. sp. Male genitalia from above.

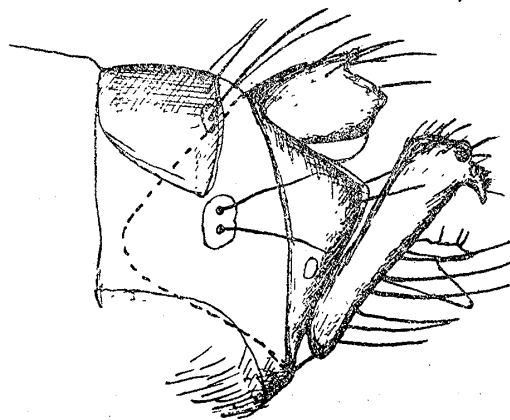


Fig. 17

Fig. 17.—Same from side.

separated by three excisions, median one being the deepest. Seen from the side, each appendage forms a triangular projection directed backwards, and above it an excision present; each appendage bears but 4-5 hairs (Fig. 17). 10th segment forming a narrow plate which is dilated in its basal portion (behind the membrane, connecting præanal appendages); the edges are armed with short spinules, three being on each lateral side and two at apex. Pedes genitales straight, if seen from side, gradually thickening to their ends; apical portion with irregularly tuberculated hind margin and with a small curved process beneath; seen from above the pedes genitales are curved inwards in their distal portions; apical portion provided with two small and slender processes which are placed one under the other; lower process triangular; hind portions of the appendages bear several long stiff hairs. Penis invisible.

Length of body 3 mm.

This species is apparently allied to *M. setiferum* Pictet.

3. *Micrasema uenoi* n. sp. (Figs. 18-19)

3 ♂, 1 ♀. Yudaki near Yotomo, Nikko. 3. VI. 1931, M. Uéno.

Head and thorax black with blackish hairs; antennæ brown; in the palpi labiales the 3rd joint only slightly longer than the 2nd; in the palpi maxillares it is longer. In female the 5th joint of the palpi maxillares nearly as long as the 3rd, the 4th longer than the 2nd. Legs yellowish brown. Anterior wings brownish grey; venation resembles that in the foregoing species, but the discoidal cell is shorter and triangular; cross-vein closing the discoidal cell, *rs-m* hyaline; in the posterior wings fork 1 long and broad; sometimes there are indistinct traces of the cross-vein closing the discoidal cell. Abdomen brown with pale lateral lines.

♂. 9th segment broad in its side-portions, narrow above; appendices præanales brown, subtriangular seen from side, broad and triangular seen from above; they are connected at their bases with a pale membranous portion. 10th segment very short and represented by a short plate which is subdivided by a median excision into two small oval lobes, each bearing three short but strong bristles (fig. 18). Pedes genitales ascendent, straight in side view, somewhat curved inwards seen from above; with their bases are connected above on each side, an upper branch of which is shorter, black and hairy; from the inner side of the pedes genitales arises the second stick-shaped paler branch

which is only seen from above. Penis is of extraordinary shape, its apical portion being much thickened and curved downwards, but membranous in its upper apical part; above there is a second large membranous lobe which is raised upwards; in its interior a small brown chitinous body may be perceived; seen from side it is elongated, but seen from above it is composed of a short pedicel and of a rounded distal portion which is deeply excised behind.

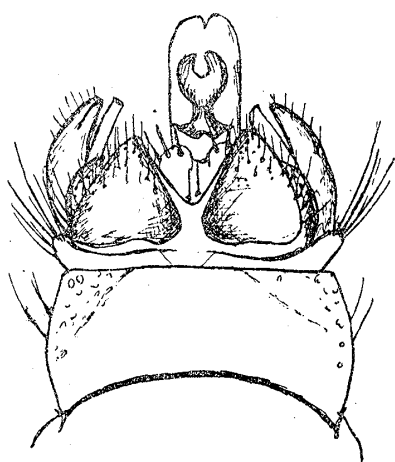


Fig. 18

Fig. 18.—*Mircasema uenoi* n. sp. Male genitalia from beneath.

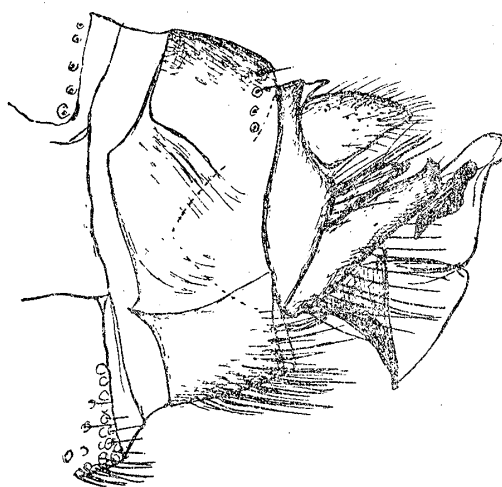


Fig. 19

Fig. 19.—Same from side.

Length of body, 4 mm. in ♂; ♀ a little larger.

I name this species in honour of M. Uéno who is the gatherer of the present collection.

Genus: *Eothremma* n. gen.

Distinct ocelli present; palpi labiales long, three-jointed as usual; palpi maxillares one-jointed and very short. Spurs 1. 3. 4, anteapical ones long. In the anterior wings *RS*, discoidal cell and forks 1 and 2 are all as in the genus *Thremma* McLach., but *M* united with *CuA* in the greatest part of its length, and thyridial cell is short enough; forks 3 and 5 present; in the posterior wings *RS* departing very early from *R*; only 2nd and 5th forks are present; anal veins straight, diverging from the base.

In the male genital segments preanal appendages large, but pedes genitales small, reduced and united with the 9th sternite; 10th segment with paired processes.

This new genus belongs to the subfamily: Thremminæ.

4. *Eothremma japonica* n. sp. (Figs. 20-25)

3 ♂♂. Yudaki, a water-fall near Yomoto Hot-spring, Nikko. 3. VI. 1931, Uéno.

Head and thorax dark brown, with blackish hairs; antennæ brown, basal joint elongated, thick, almost as long as the head; ocelli present, distinct; third joint of the palpi labiales a little longer than the second and first combined; palpi maxillares one-jointed, in the shape of a rounded knob, hairy and directed forwards (fig. 20). Legs rather long, brown; spurs 1. 3. 4. Anterior wings elongated, greyish fumose, venation pale brownish; SC and R straight, RS departing very early and forming a short sub-triangular discoidal cell; 1st fork sessile but subacute at its base. 2nd fork triangularly impinging on discoidal cell; *M+Cu* straight and strong, thyridial cell narrow, a little longer than the discoidal cell; *M* dividing near the cross-vein *rs-m*; *CuP* slender and parallel to *CuA+M* and to the distal part of *CuA*; 5th fork short. Posterior wings much shorter and somewhat narrower than the anterior; SC and R long, straight; RS departing from the very base of R, 2nd fork long; *M* dividing almost at the same level as RS and forming two simple branches; 5th fork short; *CuP* and three anal veins straight. Abdomen brownish.

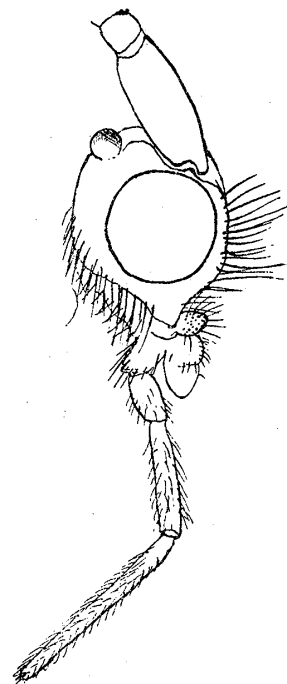


Fig. 20.—*Eothremma japonica* n. g., n. sp. ♂. Head from side.

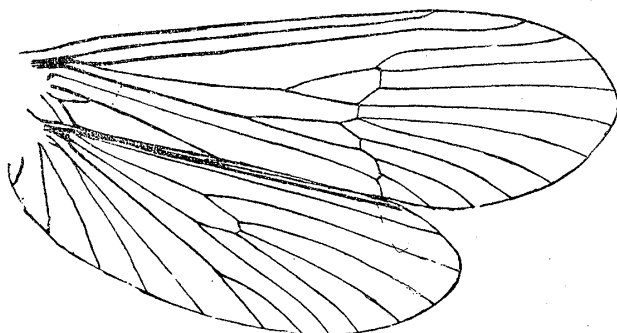


Fig. 21.—*Eothremma japonica* n. g., n. sp. ♂. Wings.

♂. 8th segment normal, bearing above long erect hairs. 9th segment moderately broad at sides, dorsal and ventral parts narrower behind the ventral portion is present a narrow band, representing the inner basal portions of the pedes genitales which are united together. Appendices præanales large, yellowish, elliptical, seen from

both side and above, clothed with short erect hairs. 10th segment very short, but forming two long stick-shaped processes, which are directed backwards and somewhat upwards; between them are situated two more minute processes directed upwards. Pedes genitales one-jointed, broad but very short, with a short triangular process behind (if seen from side), bearing short setules; lower inner portions of the pedes genitales

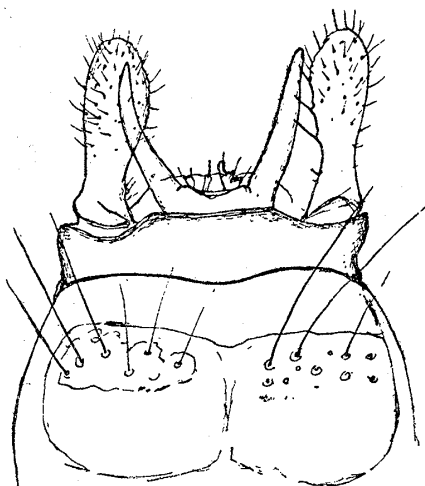


Fig. 22

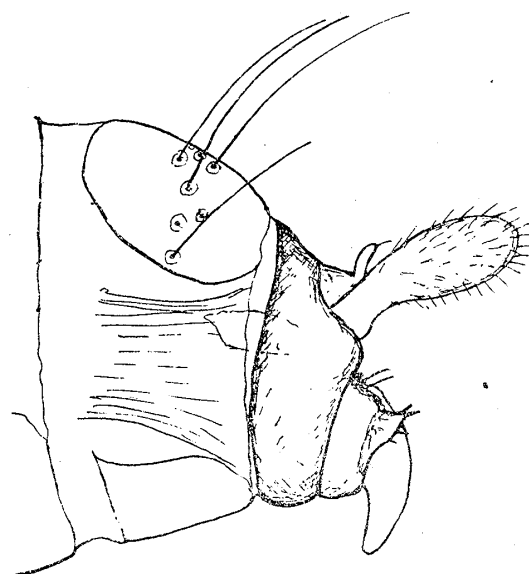


Fig. 23

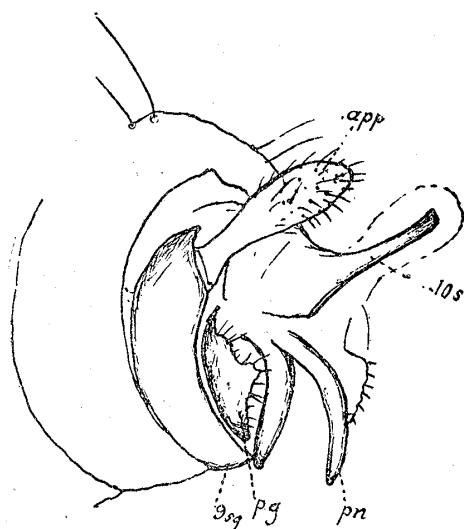


Fig. 24

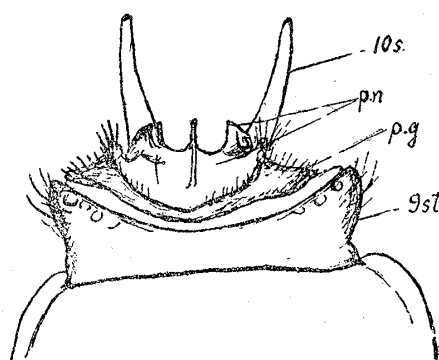


Fig. 25

Fig. 22.—*Eothremma japonica* n. g., n. sp. Male genitalia from above.

Fig. 23.—Same from side. Fig. 24.—Same obliquely from side and from beneath. Fig. 25.—Same from beneath.

united together into a narrow transverse plate or band which is placed behind the 9th sternite (fig. 25). Penis very peculiar; its basal portion very broad but short; it forms at sides two elongated and rather broad plates which are curved downwards, and between these plates there is a very short and slender median process which represents perhaps the distal portion of true penis.

Length of body 4 mm.

This genus belongs no doubt to the subfam. Thremminæ, but differs rather from the European genus *Thremma* McLach. in its strict sense.

Fam. Limnophilidæ

1. *Apatelia aberrans* n. sp. (Figs. 26-32)

4 ♂♂, 1 ♀. Matsumoto, Prov. of Shinano, a limnocrene. 15. XII. 1930, M. Uéno.

Head blackish brown, clothed anteriorly and between the antennæ with yellowish-rufous hairs; antennæ brown, the basal joint clothed with golden-yellow hairs; palpi brown. Pronotum brown, with yellowish hairs above; meso- and metathorax brown; coxæ brown, anterior femora brown, tibiæ yellow, tarsi brownish; in the 2nd and 3rd pairs of legs the femora are testaceous or brownish, tibiæ yellow, last three tarsal joints brownish and armed with black spines. Anterior wings greyish yellow, costal area and pterostigma brownish; pterostigma very broad and distinct, nearly triangular; discoidal cell curved. Abdomen brownish-testaceous; genital segments brown.

♂. 8th segment normal, bearing erect hairs above near its hind margin. 9th segment rather narrow, if seen from the side, greatly curved and drawn into the 8th segment, where the pedes genitales are articulated; 9th sternite bearing a long and broad rectangular plate which is directed backwards and is provided with a shallow excision at its apex. 9th tergite is very narrow in the middle, but forms a small and narrow median prolongation which is completely united with the median portion of the 10th segment. Appendices

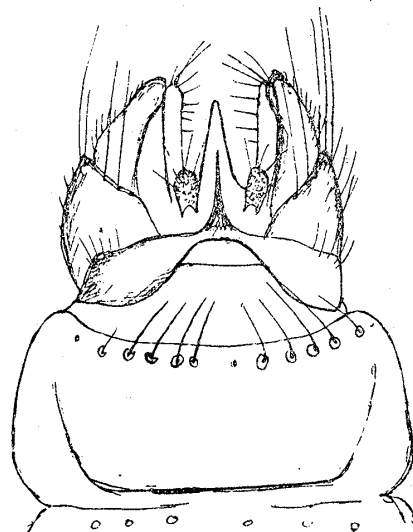


Fig. 26.—*Apatelia aberrans* n. sp.
Male genitalia from above.

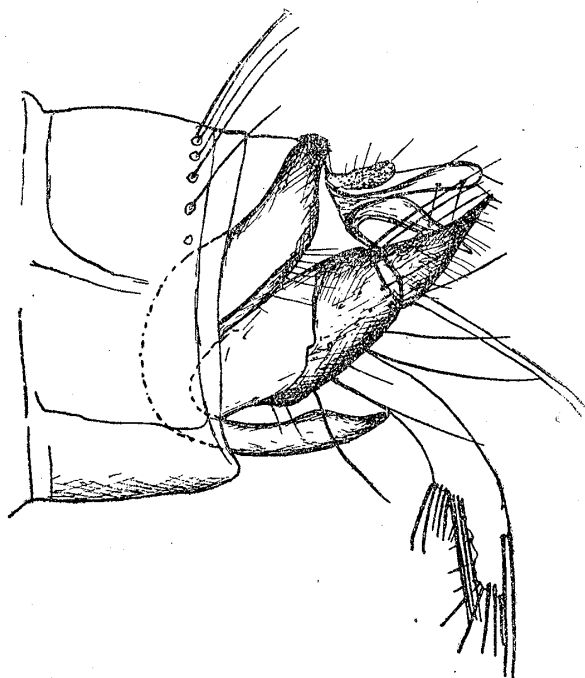


Fig. 27

Fig. 27.—*Apatelia aberrans* n. sp. Male genitalia from side. Fig. 28.—Same from beneath.



Fig. 28

præanales short, brown, with some few slender hairs. 10th segment forms a median thick process which is directed backwards and somewhat downwards and subacute at its apex; it forms also two lateral processes which are a little thickened and rounded in their distal portions,

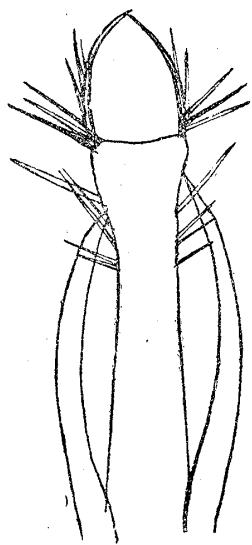


Fig. 29.—*Apatelia aberrans* n. sp. ♂. Penis from above.

which are provided here with several short stiff hairs internally. Basal joint of the pedes genitales very large and thick, but somewhat withdrawn into the curved 9th segment; its distal half well chitinized and brown, but both lower basal portion and proximal half are somewhat pale externally; brown portion provided with very long outstanding hairs. Second joint of the pedes genitales, if seen from side, has the form of an elongated brown triangle with an extended and acute apex, but seen from above it is somewhat curved inwards and rounded at its end. Penis long, provided with two long and slender titillators which are acute at their ends; apical portion bearing two lateral series of black spines or

bristles, ventral one having long and incurved spines at its apex and the other having still several spines near the base (figs. 27, 29).

♀. The structure of the female genital segments (figs. 30-32) resembles that in *Apatelia sachalinensis* Mart. 8th segment broad and somewhat chitinized, but subdivided at sides by two usual pleural stripes into dorsal and ventral portions, of which the dorsal is broad with truncated hind margin; the ventral portion is subdivided into two side portions by a median channel which is closed with a thin membrane, having an aspect of two elongated plates; the apical portion of each plate is excised and between them is situated a pouch, from whence arises a median narrow pale process which is directed backwards. Dorsal portion of the 9th segment triangularly produced backwards and fused with the "tube" (10th segment); lateral

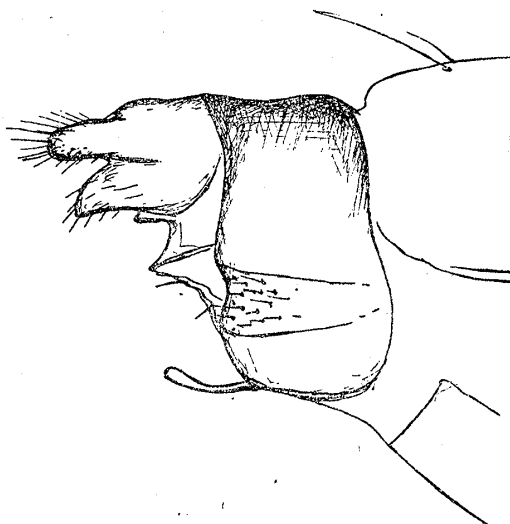


Fig. 30.—*Apatelia aberrans* n. sp. Female genitalia from side.

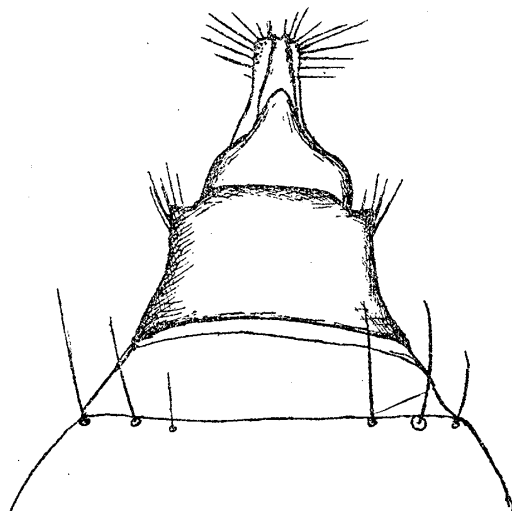


Fig. 31

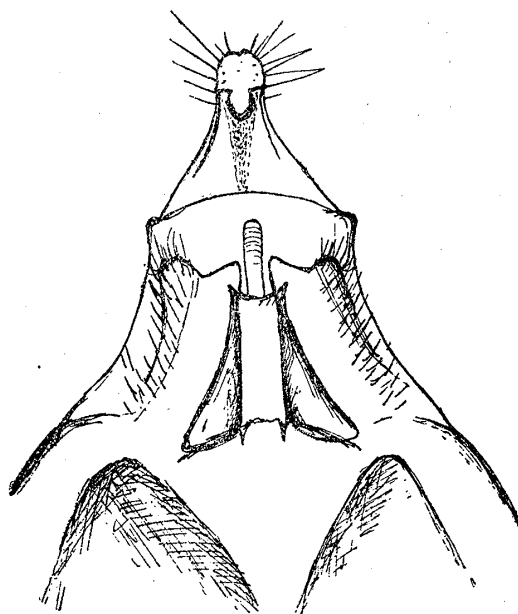


Fig. 32

Fig. 31.—*Apatelia aberrans* n. sp. Female genitalia from above. Fig. 32.—Same from beneath.

margins of the 9th segment indistinct; 10th segment divided into two portions, the upper of which is narrow and rounded at its apex and closed with two lateral groups of outstanding hairs; the lower portion, if seen from side (fig. 30), forming a subtriangularly produced lobe, the hind margin of which is provided with a deep rounded excision, viewed from beneath.

Length of body 6-8 mm.

This species is evidently allied to *Apatelia sachalinensis* Mart. from Sakhalin, but distinctly differs from it.

2. *Platyphylax nigrovittatus* McLachlan

♂. Lake Karigomé, Nikko. 5. VI. 1931, M. Uéno.